

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
CHARLESTON DIVISION**

**IN RE: AQUEOUS FILM-FORMING
FOAMS PRODUCTS LIABILITY
LITIGATION**

MDL No. 2:18-mn-2873-RMG

**This Document relates to
ALL CASES**

**TELOMER MILSPEC AFFF MANUFACTURERS' MEMORANDUM OF LAW IN
SUPPORT OF DEFENDANTS' MOTION FOR PARTIAL SUMMARY JUDGMENT
ON THE SECOND AND THIRD ELEMENTS OF THE
GOVERNMENT CONTRACTOR IMMUNITY DEFENSE**

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INTRODUCTION¹

In military operations, the right equipment delivered at the right time can mean the difference between life and death or victory and defeat. The stakes are particularly high when that equipment ensures safety in some of the most dangerous environments in the world, by providing the highest performance under the most difficult conditions—all while seamlessly integrating with systems at airfields and on billion-dollar warships. When the government exercises its discretion to accept and use such a product knowing its potential hazards, the GCD prevents state tort claims from undermining that discretionary judgment, so long as the product met the government’s specifications and the contractor warned of hazards it actually knew of and that the government did not.

As it relates to the Telomer MilSpec AFFF Manufacturers,² Plaintiffs allege that Telomer MilSpec AFFF is defective because it could contain or degrade to form perfluorooctanoic acid (“PFOA”). The government knew that fact no later than 2000, and, since then, the military has integrated this knowledge into its discretionary decision-making by continuing to test, qualify, purchase, accept, and use Telomer AFFF that conforms to the MilSpec. In contrast, the Telomer MilSpec AFFF Manufacturers—which used fluorocarbon surfactants derived from fluorotelomer

¹ Defendants incorporate the common undisputed facts set forth in Defendants’ opening and reply briefs on their motion for partial summary judgment on the first element of the GCD, Dkt. No. 1965-1 and Dkt. No. 2141.

² For purposes of this Motion, the “Telomer MilSpec AFFF Manufacturers” are Tyco Fire Products LP (formerly The Ansul Company), Chemguard, Inc., the Kidde Defendants (*see infra* n. 12), National Foam, Inc., and Buckeye Fire Equipment Company. Other MDL Defendants manufactured Telomer MilSpec AFFF, including Fire Service Plus, The Solberg Company, Amerex Corporation, and ICL Performance Products/Perimeter Solutions. *See, e.g.*, Def. Ex. 99. Pursuant to CMO-16D, these Defendants will brief elements 2 and 3 of the GCD at a later date. Dkt. No. 2280.

raw materials made by third-party chemical companies—did not know that their products could contain PFOA until after the government knew. The government has always known as much (and in fact more) about the potential hazards of PFOA than these manufacturers did.

Numerous military bases are located within the territory of the Fourth Circuit, and that court’s case law in particular is filled with cases upholding the government’s discretionary judgment to procure products despite knowledge of potential hazards, whether as to F/A-18 landing gear, helicopter rotor or escape hatch design, aircraft maintenance access panels, or aircraft ejection seats.³ Other courts have followed the Fourth Circuit’s lead in a variety of other contexts, including the Second Circuit in the *Agent Orange* MDL,⁴ which concerned a chemical used to defoliate major portions of Southeast Asia during the Vietnam War.

No one has disputed or can dispute that Telomer MilSpec AFFF has been essential to saving lives and equipment, whether on land or at sea. That is why, for nearly half a century, the Telomer MilSpec AFFF Manufacturers have been the government’s steadfast partners in the design, manufacture, and delivery of MilSpec AFFF—the gold standard in fire protection. They still work together today, as the military continues to exercise its discretion to purchase and use Telomer MilSpec AFFF knowing everything it knows, including after years of PFAS⁵ litigation like this MDL.

³ Respectively, *Kleemann v. McDonnell Douglas Corp.*, 890 F.2d 698, 704 (4th Cir. 1989); *Dowd v. Textron, Inc.*, 792 F.2d 409, 412 (4th Cir. 1986) (per curiam); *Boyle v. United Technologies Corp.*, 792 F.2d 413, 414–15 (4th Cir. 1986), *remanded for further consideration*, 487 U.S. 500 (1988); *Tozer v. LTV Corp.*, 792 F.2d 403, 405 (4th Cir. 1986); and *Ramey v. Martin-Baker Aircraft Co.*, 874 F.2d 946, 950–51 (4th Cir. 1989).

⁴ *In re Agent Orange Prod. Liab. Litig.*, 517 F.3d 76, 94–95 (2d Cir. 2008).

⁵ PFAS refers to per- and polyfluoroalkyl substances.

There likewise can be no genuine dispute of material fact that these manufacturers qualify for summary judgment under all three elements of the GCD. For almost 50 years (up through and including today), the government has tested, approved, accepted, and used Telomer MilSpec AFFF. It is undisputed that these manufacturers never withheld any knowledge they actually had relevant to potential hazards of Telomer MilSpec AFFF, let alone any such knowledge that the government—given its unique province over all types of MilSpec AFFF—did not already have.

The Telomer MilSpec AFFF Manufacturers set forth below undisputed facts that are common to all of them, and then explain why these facts lead to summary judgment on elements 2 and 3 for each company. These Defendants respectfully request that the Court hold that each satisfies all elements of the GCD as a matter of law.

COMMON UNDISPUTED FACTS⁶

1. The government has listed Telomer MilSpec AFFF products on the QPL continuously since 1973.

In the 1960s, the Navy invented the first AFFF products using fluorosurfactants produced by 3M through the electrochemical fluorination (“ECF”) process. Defs.’ Omnibus Mem. in Supp. Mot. Partial Summary J. on First Element of the GCD (“Def. Mem.”) 10–12, Dkt. No. 1965-1. Its experience with these early AFFF products formed the basis for the first AFFF MilSpec, which the government itself wrote and then issued in 1969. Def. Mem. 12–19.

The Telomer MilSpec AFFF Manufacturers first gained government approval and listing on the QPL in 1973, with National Foam MilSpec AFFF. Def. Ex. 99. Tyco (then called Ansul) followed in 1976, Chemguard in 1998, and Buckeye in 2004. *Id.* The Telomer MilSpec AFFF

⁶ These facts are cited *infra* as “CUF #.”

Manufacturers were not vertically integrated chemical companies, meaning that they used fluorocarbon surfactants derived from third-party suppliers' raw fluorochemicals. Def. Ex. 57 at 5. These suppliers exclusively used "telomerization" to generate their fluorochemicals, which have always been based on different compounds than those created through the ECF process. Def. Mem. 12–13; Def. Ex. 57 at 5–6; *see also* Def. Ex. 34 at 5.

As Defendants' Omnibus Memorandum of Law in Support of Their Motion for Partial Summary Judgment on the Second and Third Elements of the GCD ("Omnibus Br."), Dkt. No. 2346, explains in more detail, the government tests and approves conforming MilSpec AFFF products for listing on the QPL—a process required by the AFFF MilSpec itself. *See* Omnibus Br. 8–10. The government procures and uses MilSpec AFFF only if listed on the QPL. *Id.* at 8.

The Telomer MilSpec AFFF Manufacturers' products have since been reapproved for inclusion on the QPL many times over, resulting in 41 qualified Telomer MilSpec AFFF products over the years. Def. Ex. 99. The attached Appendix lists the individual products and years of active QPL listing for which the Telomer MilSpec AFFF Manufacturers satisfy all elements of the GCD.

2. Telomer-based fluorocarbon surfactants have never contained PFOS, and Telomer MilSpec AFFF Manufacturers did not know until the 2000s that Telomer MilSpec AFFF could contain PFOA.

It is undisputed that telomer-based fluorocarbon surfactants do not—and cannot—contain or break down into perfluorooctane sulfonate ("PFOS"). *See, e.g.,* City of Sioux Falls Am. Compl. (Dkt. No. 5) ¶ 43; Town of Ayer Am. Compl. (Dkt. No. 11) ¶ 42; *see also* Def. Ex. 122 at 1 ("Telomer-based AFFF does not contain PFOS . . ."). Hence, it is undisputed that none of the Telomer MilSpec AFFF Manufacturers' products ever contained or degraded to PFOS.

With respect to PFOA, it is also undisputed that the Telomer MilSpec AFFF Manufacturers never added PFOA to their AFFF or used it as an ingredient. Def. Ex. 122 at 1 (“PFOA is not an ingredient in AFFF”); TMM Ex.⁷ 11 (Hubert Decl.) ¶ 28; TMM Ex. 52 at ’371 ([REDACTED]); TMM Ex. 53 at 39; TMM Ex. 60 (Regina Dep.) 496:13–24 (confirming that National Foam “didn’t add PFOA in [its] production process”); TMM Ex. 65 (Vegso Dep.) 75:3–80:2; 197:18–198:16. The Telomer MilSpec AFFF Manufacturers also never used fluorocarbon surfactants based on or derived from PFOA. *See* TMM Ex. 11 (Hubert Decl.) ¶ 28; TMM Ex. 60 (Regina Dep.) 497:4–10 (confirming that National Foam “never used a foam product that was based on a surfactant utilizing PFOA as an intentional ingredient”); TMM Ex. 65 (Vegso Dep.) 75:3–80:2; 197:18–198:16. In contrast, other commercial fluorocarbon chemicals were known to contain or degrade to PFOA, and, by 1999, studies had reported that PFOA was a likely degradation product of non-telomer AFFF. *See* TMM Ex. 1 at 2800, 2805.

It was not until the 2000s, as fluorotelomer manufacturers made advances in fluorocarbon detection technology, that the Telomer MilSpec AFFF Manufacturers became aware that certain telomer-based fluorocarbon surfactants can contain trace amounts of PFOA, believed to be unintentional byproducts of the telomerization process. *See infra* pt. II. In addition, later research has posited ways that C8 fluorocarbon chemicals used in telomer-based AFFF may degrade in the environment to form PFOA. *See* Def. Mem. 17–18. No Telomer MilSpec AFFF Manufacturer had actual knowledge—the level of knowledge *Boyle* requires, Omnibus Br. 4–5—before the 2000s that its MilSpec products contained or could degrade to PFOA. TMM Ex. 11 (Hubert Decl.)

⁷ The Telomer MilSpec AFFF Manufacturers’ exhibits are referenced herein as “TMM Ex.”

¶ 35; TMM Ex. 51; TMM Ex. 62; TMM Ex. 65 (Vegso Dep.) 197:18–198:16. As discussed below, the government had that knowledge earlier.

3. The government was aware by no later than 2000 or early 2001 that Telomer MilSpec AFFF contained trace levels of PFOA and compounds that may degrade to form PFOA.

Plaintiffs concede, as they must, that the government was aware by no later than 2000 that the fluorocarbon surfactants used in Telomer MilSpec AFFF contained trace levels of PFOA. Pls.’ Opp. to Def. Mem. (“Opp.”) 33–35, Dkt. No. 2063. Internal military documents from that time period confirm this admission. For example, referring to telomer MilSpec AFFF, notes of a January 2001 meeting between Air Force, Navy, and EPA personnel stated plainly that “[a]t least 4 other companies [other than 3M] manufacture MIL-SPEC AFFF that contains PFOA,” Def. Ex. 119 at 1, and in internal Navy email correspondence in February 2001, Dr. Ronald Sheinson of the Naval Research Laboratory (“NRL”), responding to inquiries from the Naval Sea Systems Command (“NAVSEA”), stated that telomer-based AFFF products “employ chemistry containing PFOA or components leading to PFOA products.” Def. Ex. 127 at ’537; *see also* TMM Ex. 2 (Walker Dep.) 565:7–569:25 (explaining that this knowledge was “confirmed in that meeting with the EPA”); TMM Ex. 3 (Darwin Dep.) 165:3–169:20 (noting his understanding that telomer-based AFFF products “were free of PFOS but might contain trace amounts of PFOA”). By 2000, the government was therefore already making decisions to continue to purchase and use Telomer MilSpec AFFF based on its awareness of trace levels of PFOA in the products.

There also is no dispute of material fact that by no later than 2000 the government knew that certain fluorocarbon surfactants in telomer-based AFFF—even if they did not contain PFOA at the time of manufacture—could degrade to PFOA in the environment. Internal military

documents demonstrate that the military was studying and discussing this issue before and after 3M's withdrawal from the AFFF market in 2000.

For example, an October 2000 internal Air Force memo explained that the “other qualified products” on the QPL following 3M's exit (i.e., Telomer MilSpec AFFF) “do not degrade to PFOS” but that the “primary degradation products of these AFFF compositions are perfluorooctanoic acid (PFOA) and perfluorodecanoic acid (PFDA),”⁸ which “are very closely related to PFOS, very persistent, and appear to be bioaccumulating and toxic.” Def. Ex. 100 at '773; TMM Ex. 2 (Walker Dep.) 548:3–552:9 (explaining that Air Force personnel were aware of the potential presence of PFOA in some compositions of telomer-based AFFF in 2000); TMM Ex. 4 (draft DoD letter stating that 1998 Air Force tests found “results consistent with the degradation of telomer surfactants to perfluorocarboxylic acids,” i.e. PFOA and its homologues). By January 2001, an internal government white paper entitled “AFFF Environmental and Toxicity Issues,” stated that fluorocarbon compounds in Telomer MilSpec AFFF “degrade to PFOA” and that “most, if not all, qualified [i.e. QPL-listed] AFFF contain fluorinated compounds which degrade to PFOA.” TMM Ex. 5 at '777; TMM Ex. 6 at '348 (March 2001 correspondence to Curtis Bowling (then the Assistant Deputy Under Secretary of Defense for Force Protection) noting “concerns based on the degradation of [t]elomer surfactants to perfluorocarboxylic acids resembling PFOA”); *see* Def. Ex. 127.

⁸ A “homologue” of a PFAS compound refers to members of the same type of PFAS, but with differing numbers of fluorinated carbon atoms. For example, PFDA is a 10-carbon chain (“deca-” or “C10”) homologue within the perfluorinated carboxylic acid family, as compared to PFOA, which is the corresponding 8-carbon chain (“octa-” or “C8”) carboxylic acid homologue.

4. The government’s knowledge about potential hazards of PFOA and fluorocarbon surfactants in MilSpec AFFF has always exceeded that of the Telomer MilSpec AFFF Manufacturers.

Finally, there is no dispute of material fact that the Telomer MilSpec AFFF Manufacturers did not have actual knowledge about potential hazards of PFOA that was not already available to the government. The government was already fully versed in the potential hazards posed by PFOA by no later than 2000 and had already begun incorporating this knowledge in its discretionary decision-making about MilSpec AFFF. *See* Def. Ex. 100 (2000 draft memo); Def. Ex. 97 (2000 DoD Environmental Meeting Minutes); Def. Ex. 101 (2001 DoD Workshop memo); *see also* Def. Ex. 102 (2001 EPA Presentation describing pending regulatory action); Def. Ex. 103 (2002 EPA Draft Hazard Assessment of PFOA). The government’s knowledge about these potential hazards is compared to that of each specific Telomer MilSpec AFFF Manufacturer in the sections below.

ARGUMENT

I. The Telomer MilSpec AFFF Manufacturers meet the second element of the GCD.

The undisputed facts establish, as a matter of law, that Telomer MilSpec AFFF “conformed to th[e] [AFFF MilSpec] specifications.” *Boyle v. United Tech. Corp.*, 487 U.S. 500, 512 (1988). The military has consistently tested and inspected Telomer MilSpec AFFF products before adding them to the QPL and then purchased only those MilSpec AFFF products listed on the QPL. This, on its own, “is sufficient to establish conformity with reasonably precise specifications.” *Lewis v. Babcock Indus., Inc.*, 1992 WL 142751, at *7 (S.D.N.Y. June 8, 1992), *aff’d*, 985 F.2d 83 (2d Cir. 1993); *see also Miller v. Diamond Shamrock Co.*, 275 F.3d 414, 419 (5th Cir. 2001) (the second element can be established by “[a]cceptance and use of an item following its production”); *Szigedi v. Ensign-Bickford Co.*, 2002 WL 32086774, at *8 (M.D.N.C. July 15, 2002) (same); Omnibus Br. 2–4.

The NRL conducts rigorous qualification tests on AFFF products—tests that the MilSpec itself mandates—and will reject any product that does not meet every one of those design and performance specifications, such as having “fluorocarbon surfactants,” the ability to form an aqueous film (which only fluorocarbon surfactants are known to do), containing certain prescribed fluorine levels, or meeting other strict standards, like how quickly they extinguish a fire or how long they keep the fire out. Def. Mem. 12–19; Omnibus Br. 8–10. Telomer MilSpec AFFF Manufacturers’ products qualified for listing on the QPL only after successfully meeting all requirements. Omnibus Br. at 8–9; CUF 1. Hence, QPL listing is conclusive evidence of conformance to the government’s specifications, and every QPL-listed MilSpec AFFF product satisfies the second element of the GCD. *See Lewis*, 1992 WL 142751, at *7; Omnibus Br. 2–4.

In addition to QPL qualification and listing, the military’s “continued use” of Telomer MilSpec AFFF from the 1970s through today also independently “establishes the second element under the [GCD].” *Yeroshefsky v. Unisys Corp.*, 962 F. Supp. 710, 719 (D. Md. 1997). Even when the government has identified “actual and potential problems during design and production,” *Kleemann v. McDonnell Douglas Corp.*, 890 F.2d 698, 704 (4th Cir. 1989), the contractor is still entitled to the government contractor defense so long as the government continues to use the product, *Dowd v. Textron, Inc.*, 792 F.2d 409, 412 (4th Cir. 1986) (per curiam). This is true even for claims arising before the government-identified defect is ultimately resolved to the government’s satisfaction, because “if a mere notification of defect precluded application of the government contractor defense, the climate of candid exchange between the government and the contractor would be compromised.” *Kleemann*, 890 F.2d at 704.

A. Ansul and Tyco's MilSpec AFFF conformed to specifications.

Tyco and its predecessor Ansul have qualified thirteen “Ansulite,” “AFC,” or “Ansul AFFF” MilSpec products to the QPL since 1976. Def. Ex. 99; TMM Ex. 11 (Hubert Decl.) ¶ 23. These Navy-tested, QPL-listed products conformed to the MilSpec as a matter of law. The military also has repeatedly purchased and continuously used Tyco's MilSpec AFFF since 1976, further establishing that these products conformed to the government's reasonably precise specifications. *See* TMM Ex. 11 (Hubert Decl.) ¶¶ 20, 22–23; TMM Ex. 12 at 2–3, 5; TMM Exs. 13–14 (purchases from Tyco are reflected by entries containing “03670” in “CAGE” column); TMM Ex. 15 (purchases from Tyco are reflected by entries containing “03670” in “CAGE” column of “POs2Plus_8NIINs” tab); TMM Ex. 16 (e.g., entries containing “DFAS-CO Columbus Center” in “Cust Name” column); TMM Ex. 17 (e.g., entries containing “The Hiller Companies, Inc.” in “Cust Name” column)⁹; TMM Ex. 18 (e.g., entries containing “Defense Finance & Acctng Svce” or “The Hiller Companies, Inc.” in “Cust Name” column); TMM Ex. 19 (entries containing “NAVSUP Supply Command Fleet & Industria,” “Defense Finance & Acctng Svce,” or “The Hiller Companies, Inc.” in “Cust Name” column); TMM Ex. 20 (e.g., entries containing “USAF” or “US Navy” in “Ship To Customer (2)” column); TMM Ex. 21 (e.g., entries for “Edwards AFB,” “Holloman Air Force Base, New Mexico,” or “SW0400 DLA Distribution Richmond” in “Ship To Customer (2)” column of “Sheet1” tab); TMM Ex. 22 (e.g., entries for “Naval Station Norfolk,” “Eglin AFB,” or “SW0400 DLA Distribution Richmond” in “Ship To Customer (2)” column of “Sheet1” tab).

⁹ *See* TMM Ex. 12 at 3–4 (identifying “The Hiller Companies, Inc.” in “a list of vendors who DLA has identified as selling AFFF fire suppressant to the United States military from 1983 to present”).

[REDACTED]

[REDACTED]

[REDACTED] TMM Ex. 23 at '126; TMM Ex. 24 at '295.¹⁰ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] TMM Ex. 23 at '126–27; *see* TMM Ex. 24 at '295–96.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] TMM Ex. 25 at '104. [REDACTED]

[REDACTED]

[REDACTED] TMM Exs.

28–29.

[REDACTED] *see* TMM Ex.

28, [REDACTED]

[REDACTED]. TMM Ex. 30 at '817. [REDACTED]

[REDACTED]

[REDACTED]. *See* TMM Ex. 31 at '495, '497. [REDACTED]

[REDACTED]

¹⁰ [REDACTED] *See* TMM Ex. 24 at '296.

“ShipToName” column of “CHE_Sales_Report_Table” tab); TMM Ex. 34 (e.g., “Dept of the Army” or “Dept of Air Force 45 CES/CEO” in “ShipToName” column); TMM Ex. 35 (e.g., “Navy Region Mid-Atlantic” or “Luke AFB” in “ShipToName” column); TMM Ex. 36 (e.g., “McChord Air Force Base” or “Navy Region Mid-Atlantic” in “ShipToName” column); TMM Ex. 37 (e.g., “McGuire Air Force Base P161 V” or “U.S. Air Force Base” in “ShipToName” column).

[REDACTED]
[REDACTED]. TMM Ex. 38 at '067.¹¹ Chemguard’s other QPL-listed MilSpec AFFF at the time, Chemguard C-301MS 3% AFFF, remained on the QPL throughout this period (and until 2017, after Chemguard had qualified new products for listing on the QPL). Def. Ex. 99. [REDACTED]

[REDACTED]
[REDACTED]. TMM Ex. 25 at '104. [REDACTED]

[REDACTED]
[REDACTED]. TMM Ex. 30 at '817; TMM Exs. 39–40. [REDACTED]

[REDACTED]. See TMM Ex. 31 at '495, '497.

[REDACTED]
[REDACTED] See *Ramey*, 874 F.2d at 951; *Lewis*, 985 F.2d at 89.

¹¹ [REDACTED]
See *id.* at '068.

[REDACTED]

[REDACTED] TMM Ex. 26 at '170. These products were reformulated to reflect the phase-out of long-chain fluorotelomer ingredients, and they remain QPL-listed and in use today. TMM Ex. 27 (Libal Dep.) at 179:23–186:8.

Hence, Chemguard's MilSpec AFFF has always conformed to the MilSpec, as demonstrated by qualification for listing on the QPL, [REDACTED] and/or the continued purchase, acceptance, and use of these products. *Lewis*, 985 F.2d at 89.

C. Kidde's and National Foam's MilSpec AFFF conformed to specifications.

Kidde and its predecessors¹² and National Foam¹³ first qualified MilSpec AFFF to the QPL on October 24, 1973. Def. Ex. 99. They have qualified and/or requalified MilSpec AFFF twenty times since 1973. *Id.* There is no indication that Kidde or National Foam's MilSpec AFFF products ever failed to conform to applicable specifications. [REDACTED]

[REDACTED] *See, e.g.*, TMM Ex. 55 at 320. Hence, “[n]o issue exists as to [Kidde and National Foam's MilSpec AFFFs'] conformity” to the government's reasonably precise specifications. *See Ramey*, 874 F.2d at 951.

¹² “Kidde” means Kidde-Fenwal, Inc. Additional, related entities have also been named as defendants in these cases, including Kidde PLC, Carrier Global Corporation, Raytheon Technologies Corporation f/k/a United Technologies Corporation, and UTC Fire & Security Americas Corporation (collectively with Kidde, the “Kidde Defendants”). Kidde operated the fire-fighting foam business that included the National Foam brand. Kidde owned that business from 2005 until 2013, when Kidde sold the assets of the then-existing National Foam business to an unrelated entity that now operates as National Foam, Inc.

¹³ National Foam means National Foam, Inc., a Delaware corporation that began operations on June 28, 2013, and includes the assets of the National Foam branded business divested by Kidde.

D. Buckeye's MilSpec AFFF conformed to specifications.

Buckeye first qualified an AFFF product to the MilSpec QPL in 2004. Def. Ex. 99. That AFFF product passed the government's rigorous testing requirements and remained on the QPL until 2015. *Id.* Buckeye next qualified two new AFFF products to the QPL starting in 2020. *Id.* These two products remain on the QPL today.

Buckeye passed the initial testing and qualification required by the government and there has never been a determination that the as-qualified products failed to conform to the specification or failed any MilSpec criteria. Therefore, Buckeye's AFFF MilSpec products meet the second prong of the GCD. *See Ramey*, 874 F.2d at 951 (holding that where "[n]othing in the record suggests to us that the Navy found the [product] not to conform to specifications[,] . . . [i]t is not [the court's] province . . . to make such a finding [on] the Navy's behalf").

II. The Telomer MilSpec AFFF Manufacturers meet the third element of the GCD.

Plaintiffs allege that Telomer MilSpec AFFF is defective because it contains PFOA or C8 materials that could degrade to PFOA, and PFOA is alleged to be hazardous to humans and the environment. *See* Opp. 1, 30. At all times, the government was aware of this alleged defect before any of the Telomer MilSpec AFFF Manufacturers actually knew about it. *See Boyle*, 487 U.S. at 512; Omnibus Br. at 4–7; CUF 2; CUF 3; *see also* CUF 4. As a matter of law, this is sufficient to satisfy *Boyle*'s third element.

Specifically, the undisputed material facts establish that the Telomer MilSpec AFFF Manufacturers did not even know that PFOA or PFOA precursors were in their products until the mid-2000s. CUF 2. Plaintiffs implicitly concede that government knowledge on PFOA in AFFF is differentiated into pre- and post-2000 periods, and that the government was aware after 2000. Opp. 33–34; *see also* CUF 3. By that time, the potential hazards of PFOA also were known to the

government; at no time did the Telomer MilSpec AFFF Manufacturers have any knowledge of such hazards that the government did not have. CUF 4. Because the military “was independently aware of the defect” and “at least as aware as the contractor,” the Telomer MilSpec AFFF Manufacturers satisfy the third element of the GCD. *Haltiwanger v. Unisys Corp.*, 949 F. Supp. 898, 904 (D.D.C. 1996); *Stout v. Borg-Warner Corp.*, 933 F.2d 331, 336–37 (5th Cir. 1991); *see In re Agent Orange Prod. Liab. Litig.*, 304 F. Supp. 2d 404, 435 (E.D.N.Y. 2004) (“[T]he third prong may be satisfied if the government ‘has greater knowledge of the problems’ with the product.” (citation omitted)), *aff’d*, 517 F.3d 76 (2d Cir. 2008).

A. Ansul and Tyco’s actual knowledge never exceeded that of the government.

Tyco (including its predecessor Ansul) has never had greater knowledge than the government about the alleged defect of PFOA in Telomer MilSpec AFFF or any other potential hazard related to fluorocarbon surfactants in MilSpec AFFF. More specifically, Tyco did not have actual knowledge until years after the government did that its MilSpec AFFF contained PFOA or components that may degrade to PFOA, and thus it could not have provided any warning about PFOA to the government (which the government knew about already, in any event, CUF 3). Tyco never had the in-house capability to test for PFOA in its products. By the time third-party laboratories could finally quantify trace PFOA in Tyco’s AFFF products in 2008, the potential hazards of PFOA were fully known to the government. Def. Mem. 19–32. Tyco’s knowledge on these topics developed from information generated by government agencies, available in the public domain, or provided by fluorochemical suppliers.

In May 2000, when 3M announced its plan to withdraw from the AFFF market, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] TMM Ex. 41. [REDACTED]

[REDACTED]

[REDACTED] TMM Ex. 66 at 3. In contrast, the government, in the same year, was already flagging in internal documents that it believed that the “primary degradation products of [non-3M] AFFF compositions are [PFOA] and [PFDA],” which are “very persistent, and appear to be bio-accumulating and toxic.” Def. Ex. 100 at ’773; Def. Mem. at 28; *see also* CUF 3.

By late 2000, the government had determined that Telomer MilSpec AFFF could contain PFOA and believed that some fluorocarbon components in Telomer MilSpec AFFF could degrade to PFOA. CUF 3. Tyco had no such knowledge at the time. TMM Ex. 11 (Hubert Decl.) ¶¶ 31, 33, 35. To the contrary, a 2003 report about Tyco’s AFFF products [REDACTED] [REDACTED] informed Tyco that the telomer-based fluorocarbon surfactants in Tyco’s AFFF products did *not* degrade to PFOA. TMM Ex. 42 at 15, 17; TMM Ex. 43 at ’291.

Detecting small amounts of PFOA in AFFF can be analogized to attempting to see a pinprick of light in a brightly-lit auditorium. Because that requires sophisticated technology that has only recently been developed, Tyco did not possess the internal analytical capability to test its products for PFOA. TMM Ex. 11 (Hubert Decl.) ¶ 38. It was only in 2005 or 2006, in light of the information then available to Tyco, that the company first recognized the possibility that PFOA could exist in trace amounts in its products below the then-prevailing limits of detection. *Id.* ¶ 35; *see* TMM Ex. 44 (May 2006 letter stating that “[REDACTED]

[REDACTED]

[REDACTED]”); TMM Ex. 45 (February 2007 letter stating that “[REDACTED]

[REDACTED]

[REDACTED]”).

By 2008, commercial laboratories had begun to offer testing to lower limits of detection. TMM Ex. 11 (Hubert Decl.) ¶ 38. Accordingly, Tyco hired a third-party laboratory to perform this analysis. *Id.* ¶¶ 38–39. When Tyco received these test results in 2008, it first gained actual confirmation that trace amounts of PFOA were quantifiable in some of its AFFF products. TMM Ex. 46 at ’390. Even then, PFOA was not detected in the MilSpec product sampled, Ansulite AFC-5A. *Id.*; TMM Ex. 11 (Hubert Decl.) ¶ 39. By this point, the government had long understood that telomer-based AFFFs could contain PFOA and was aware that some fluorocarbon components could degrade to PFOA. CUF 3; *see Haliwanger*, 949 F. Supp. at 904 (“If the government was already independently aware of a risk and chose to act regardless of that knowledge, defendant may still employ the government contractor defense without further warning the government.”).

These facts regarding actual knowledge of the alleged defect are dispositive on element three for Tyco. The company could not warn the government of any potential hazards posed by PFOA in or from its products because it did not even know PFOA was or could be present until long after the government knew.

It is, however, worth noting Tyco’s decades-long history of partnering with the military on AFFF, including by making known to the Navy the data that was available to Tyco throughout this relationship. For example, in 1976 the Navy awarded Ansul a contract to study the environmental characteristics of AFFF. Def. Ex. 63 at 1; Def. Ex. 92. After studying nine AFFF components, “including fluorocarbon and hydrocarbon surfactants and solvents,” Ansul informed the Navy that AFFF “toxicity was related to the surfactants.” Def. Ex. 63 at 5. It was around this time that NAVSEA added the first limits on biodegradability and toxicity to a new version of the AFFF

MilSpec. Def. Ex. 3 (1977 MilSpec) §§ 3.16, 4.7.16. Similarly, in 1980, Ansul provided the Air Force with the results of third-party environmental and fish toxicity studies on its AFFF products. TMM Ex. 47.

In 1981, Ansul became aware of “3M tests showing potential birth defects from oral ingestion of fluorinated surfactants by pregnant rats” and reported them to the Navy. TMM Ex. 48; TMM Ex. 3 (Darwin Dep.) 240:7–241:20 (recalling a call from Ansul regarding “studies done on rats” that had been “exposed to a 3M product”). Soon thereafter, in 1982, following publication of 3M worker studies describing accumulation of fluorochemicals in fluorochemical plant workers’ blood serum, Def. Ex. 68, Ansul provided the Navy with information on the “fluorine level of workers at Ansul who normally handle the AFFF products from a production and testing view.” TMM Ex. 49 at ’625. Ansul found “no significant difference” in fluorine levels in the blood of its employees who worked with AFFF as compared to a control group, which indicated to Ansul that there was no pathway for the fluorocarbon surfactants Ansul purchased from suppliers and used in its AFFF products to enter the human body during the AFFF manufacturing process. *Id.* As with the previous data, Ansul shared this information with the Navy.

The evidence thus establishes that Tyco never had greater knowledge than the government regarding PFOA in telomer-based AFFF and that when it obtained information relevant to potential toxicity of AFFF, it provided such information to the government and worked as its partner on the issues, including during a project that led to the development of the first MilSpec environmental limits in 1977. Tyco had “no duty to warn the government of hazards of which it [was] not actually aware,” *Sundstrom v. McDonnell Douglas Corp.*, 816 F. Supp. 587, 590, 593 (N.D. Cal. 1993), and therefore Tyco satisfies the third element of the GCD as a matter of law, *Kerstetter v. Pac. Sci. Co.*, 210 F.3d 431, 436 (5th Cir. 2000).

B. Chemguard's actual knowledge never exceeded that of the government.

The record establishes that Chemguard has never had greater knowledge than the government about the alleged defect of PFOA in Telomer MilSpec AFFF or any other potential hazard related to fluorocarbon surfactants in MilSpec AFFF. Like Tyco, it did not have the in-house technical capability to test for PFOA in its products. TMM Ex. 54 (Bowen Dep.) 111:6–20. Chemguard's knowledge on these topics developed from information generated by government agencies, available in the public domain, or provided by fluorochemical suppliers.

Chemguard's first MilSpec AFFF had been on the QPL for just two years when 3M announced its exit from the AFFF market in 2000. Def. Ex. 96; Def. Ex. 99. In the months that followed, Chemguard looked to its fluorochemical suppliers for their assurance that "telomer products have not been found to be biopersistent" and that "studies indicate that products produced by the telomerization process are not found in the blood of humans." TMM Ex. 50 at '705.

Emerging analytical technologies allowed Chemguard to first detect trace amounts of PFOA in fluorocarbon surfactants used in its AFFF products through third-party lab tests in 2008.

TMM Ex. 51. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. TMM Ex. 52 at '372. Conversely, when, in a 2007 fact sheet cited in Plaintiffs' brief on element 1, Opp. 41 n.156, [REDACTED]

[REDACTED] *see* Pls.' Ex. 111 at 1, Chemguard's

statement reflected its actual knowledge as of that date, which is what the GCD requires.¹⁴ *Kerstetter*, 210 F.3d at 436.

Given that all of this information was known by the government by no later than 2001, before Chemguard knew it, *see* CUF 3, Chemguard satisfies the third element of the GCD as a matter of law.

C. Kidde's and National Foam's actual knowledge never exceeded that of the government.

At all stages, the government's knowledge about the potential hazards of AFFF was at least equal to, and in fact consistently exceeded, the knowledge of Kidde or National Foam. CUF 2; CUF 3; CUF 4. More specifically, Kidde did not have actual knowledge until years after the government did that its MilSpec AFFF even contained PFOA or components that may degrade to PFOA, and thus it could not have provided any warning about PFOA to the government. By the time third-party laboratories could finally quantify the PFOA in Kidde's AFFF products in or around 2008, the potential hazards of PFOA had been fully known to the government for some time. Def. Mem. 19–32; CUF 3. Indeed, any knowledge Kidde or National Foam gained on these topics was dependent upon information made available to it by the government, publicly available studies, and information received over time from fluorosurfactant manufacturers.

To be sure, Kidde followed with interest the release of any available data on ongoing studies relating to the potential of telomer AFFF to contain or degrade into PFOA, particularly after 3M announced its exit from the AFFF market in 2000. In a March 2001 email, a Kidde employee noted that “[s]ince 3M’s announcement” fluorosurfactant manufacturers “have been

¹⁴ There is also no evidence that government personnel ever saw or relied on this document.

conducting studies,” including on the potential break down products of telomer-based surfactants, observing that “the interim studies look good at this point.” TMM Ex. 56; *see also* TMM Ex. 57; TMM Ex. 58. In March 2002, Kidde noted developments suggesting that “theoretically, there is opportunity for Telomer to metabolize into PFOA – although in fact nothing has been actually found.” TMM Ex. 59. Kidde still had no actual knowledge of any such degradation as of this date. TMM Ex. 60 (Regina Dep.) 595:3–15; Omnibus Br. 4–5; *Sundstrom*, 816 F. Supp. at 593. But even if Kidde were deemed to have actual knowledge of the presence of PFOA or its precursors based on its earliest discussions with its suppliers, this knowledge would still post-date the government’s knowledge of these alleged hazards. *See* CUF 3; CUF 4.

In a May 28, 2004 letter, DuPont advised Kidde and other Forafac customers that “negligible levels of PFOA may be present in some consumer articles.” TMM Ex. 61. The same letter noted that “extensive scientific studies support[] our conclusion that PFOA does not cause adverse human health effects,” and that “fluorotelomer-based products are safe for their intended uses.” *Id.* As of September 2004, Kidde was “starting to dig in for correct information of the chain length distributions of fluorosurfactants and formulations” applicable to its AFFF products, TMM Ex. 60 (Regina Dep.) 585:12–25, but Kidde did not yet have concrete information about whether PFOA was one of the C8 compounds in the DuPont Forafac 1157N that was the backbone fluorosurfactant of its AFFF, *id.* at 586:4–7.

On January 26, 2007, after improvements were made in analytical test methods, Kidde received information from DuPont quantifying the trace amounts of PFOA present in the Forafac 1157 and 1157N used in its MilSpec AFFF products. TMM Ex. 62; *see also* TMM Ex. 63 at ’301 (September 2007 DuPont presentation disclosing trace PFOA in fluorotelomer surfactants). By this point, the government had long known that Telomer MilSpec AFFF could contain and/or

degrade to form PFOA “and chose to act regardless of that knowledge”; the GCD does not require Kidde to have warned the government about issues of which the government was already aware. *See Haltiwanger*, 949 F. Supp. at 904; *Stout*, 933 F.2d at 336–37.

National Foam, Inc. began operations on June 28, 2013, after acquiring the assets of the business divested by Kidde, including the National Foam brand of fire-fighting foam. Even presuming that on the first day of its operations, on June 28, 2013, National Foam inherited the knowledge of all employees who came over from Kidde, the government had already long since acquired any such relevant knowledge about MilSpec AFFF products’ potential to contain or degrade to PFOA. *See* CUF 3.

D. Buckeye’s actual knowledge never exceeded that of the government.

Buckeye did not have an AFFF product on the QPL until 2004. Def. Ex. 99. By that time, 3M had exited the market, and the government was well aware that Telomer MilSpec AFFF could contain or degrade to PFOA and of potential hazards posed by PFOA. *See* CUF 3; Def. Ex. 100; Def. Ex. 101; Def. Ex. 103. Despite knowing this information, the government accepted and approved Buckeye’s application for listing on the MilSpec QPL.

In contrast, Buckeye had no actual knowledge that its MilSpec AFFF products could contain or degrade to PFOA in 2001 or even 2004. TMM Ex. 64 (Devonshire Dep.) 66:13–18, 120:22–124:1; TMM Ex. 65 (Vegso Dep.) 75:3–80:2; 197:18–198:16. As noted above, Plaintiffs implicitly concede that government knowledge on PFOA in AFFF is differentiated into pre- and post-2000 periods, and that the government was aware after 2000. Opp. 33–34. There is no genuine issue of material fact that from the inception of Buckeye’s MilSpec AFFF product in 2004, the government has always had more knowledge than Buckeye.

E. Both the law and the facts are fatal to the PEC's effort to impute knowledge to any defendant through organizations such as the FFFC.

Perhaps because it recognizes the lack of any dispute of material fact as to the Telomer MilSpec AFFF Defendants themselves, Plaintiffs have previously suggested that because these defendants were members of the Fire Fighting Foam Coalition ("FFFC"), they must have had different knowledge than what the evidence actually shows. But this argument cannot be squared with binding precedent. Because *Boyle* demands "*actual* knowledge," Plaintiffs' attempt to impute knowledge through group membership fails. See *Miller*, 275 F.3d at 422 (citation omitted) (rejecting plaintiffs' argument relying on suppliers' "constructive knowledge of the potential hazards" as "contrary to the clearly established case law"); see also *In re Welding Fume Prods. Liab. Litig.*, 526 F. Supp. 2d 775, 801 (N.D. Ohio 2007) (rejecting the notion that "every member of a trade organization either has or assumes a duty to warn product users of dangers posed by the product, if those dangers are discussed at the organization's meetings"). The GCD does not require a defendant to warn the government about defects about which it only allegedly *should* have known (assuming membership in a group triggers such constructive knowledge in the first place). *Miller*, 275 F.3d at 422.

A necessary corollary of *Boyle*'s actual knowledge standard is that the third element of the GCD is defendant-specific. *Boyle* requires that each contractor's actual knowledge be weighed against the government's. Plaintiffs' attempt to cast the Telomer MilSpec AFFF Defendants as a single group with shared knowledge does not obviate the need to determine, as to each defendant, whether the contractor possessed actual knowledge of the alleged defect that it failed to share with the government. As shown above, none of the Telomer MilSpec AFFF Manufacturers' knowledge exceeded that of the government.

The PEC's FFFC arguments are as wrong on the facts as they are on the law. The FFFC is a not-for-profit organization formed in 2001. TMM Ex. 8. Membership in the FFFC is open to any company or organization interested in AFFF-related issues including users, distributors, AFFF manufacturers, surfactant manufacturers, and telomer producers. TMM Ex. 9 at '755. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] TMM Ex. 10 at '043, '046. When the FFFC was formed in July 2001, with the full knowledge of and in coordination with the government, the government already knew about the defect that Plaintiffs allege in this litigation—that MilSpec AFFF contains PFOA or components that may degrade to PFOA. *See* CUF 3. Thus, whatever Plaintiffs may allege the FFFC did or said once it was formed, those actions or statements are factually irrelevant to the GCD.

But even assuming the FFFC could have somehow unwound the government's knowledge regarding PFOA in telomer AFFF, the FFFC was not a source of "disinformation," as Plaintiffs have alleged. Opp. 41. The two examples Plaintiffs have cited for this proposition in fact demonstrate the FFFC's commitment to accurately presenting evolving knowledge within the AFFF industry. The 2001 FFFC presentation Plaintiffs cite, for example, states that Telomer MilSpec AFFF "does not contain PFOS and cannot be oxidized or metabolized into PFOS" and "does not contain any PFOA-based products." Pls.' Ex. 69 at '911. This statement is true now, just as it was then: It is undisputed that neither PFOS nor PFOA is not an ingredient in Telomer MilSpec AFFF formulations and that PFOS and PFOA are not used in the production of the

fluorocarbon surfactants used in Telomer MilSpec AFFF. *See* CUF 2. But even if the statement were somehow misleading, this is irrelevant to the GCD, because once the government has the relevant knowledge (which it indisputably did at this point), no additional warnings are required. *In re Agent Orange Prod. Liab. Litig.*, 304 F. Supp. 2d at 435.

In the sole additional example Plaintiffs cite, the egregiousness of their selective quotation speaks for itself. Plaintiffs suggest that a statement in a 2017 FFFC fact sheet that “[f]luorotelomer-based foams are not made with PFOA (perfluorooctanoic acid) or any PFOS-based products . . .” somehow “prey[ed] on the government’s naivete.” Opp. 41 (first alteration in original). As noted above, this passage accurately states that Telomer AFFF does not contain PFOS or PFOA as an ingredient. *See* CUF 2. But the more important point is the passage from the document that Plaintiffs conceal behind ellipses: “but [Telomer AFFFs as a class] may contain trace quantities [of PFOA] as an unintended byproduct of the surfactant manufacturing process.” Pls.’ Ex. 68 at ’442. This, too, accurately states the general consensus that exists today.

Regardless, Plaintiffs themselves admit that by 2016 the so-called “naïve” government had all the information it needed regarding PFOA and other PFAS in MilSpec AFFF. Opp. 41; *see also* TMM Ex. 7 ([REDACTED]). It is simply implausible that an *accurate* statement about Telomer AFFFs in an industry-group fact sheet in 2017 could have unwound the government’s knowledge or undermined its discretionary decision-making.

Plaintiffs last refuge—the statements of the FFFC—provides no basis for escaping summary judgment on element 3 of the GCD with respect to the Telomer MilSpec AFFF Manufacturers. The facts and the law both render the FFFC irrelevant to the GCD analysis.

CONCLUSION

The Telomer MilSpec AFFF Manufacturers respectfully request that this Court hold that each of them satisfies the second and third elements of the GCD as a matter of law.

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Respectfully submitted,

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